

Tracking The Wily Container/Chassis: Costs and Benefits



Henry S. Marcus

Massachusetts Institute of Technology

November 2001

Types of Automated Identification Technology (AIT) Systems

- Optical Character Reader
- Radio Frequency Identification (RFID)
- Satellite/Cellular
- Hybrid

Issues

- Tag container and/or chassis (and/or cargo itself)
- What Percentage to Tag
- Focus on Cost Reduction and/or Revenue Increase
- Integrating Information Systems (and related Personnel)

Cost Assumptions for Satellite/Cellular Tag

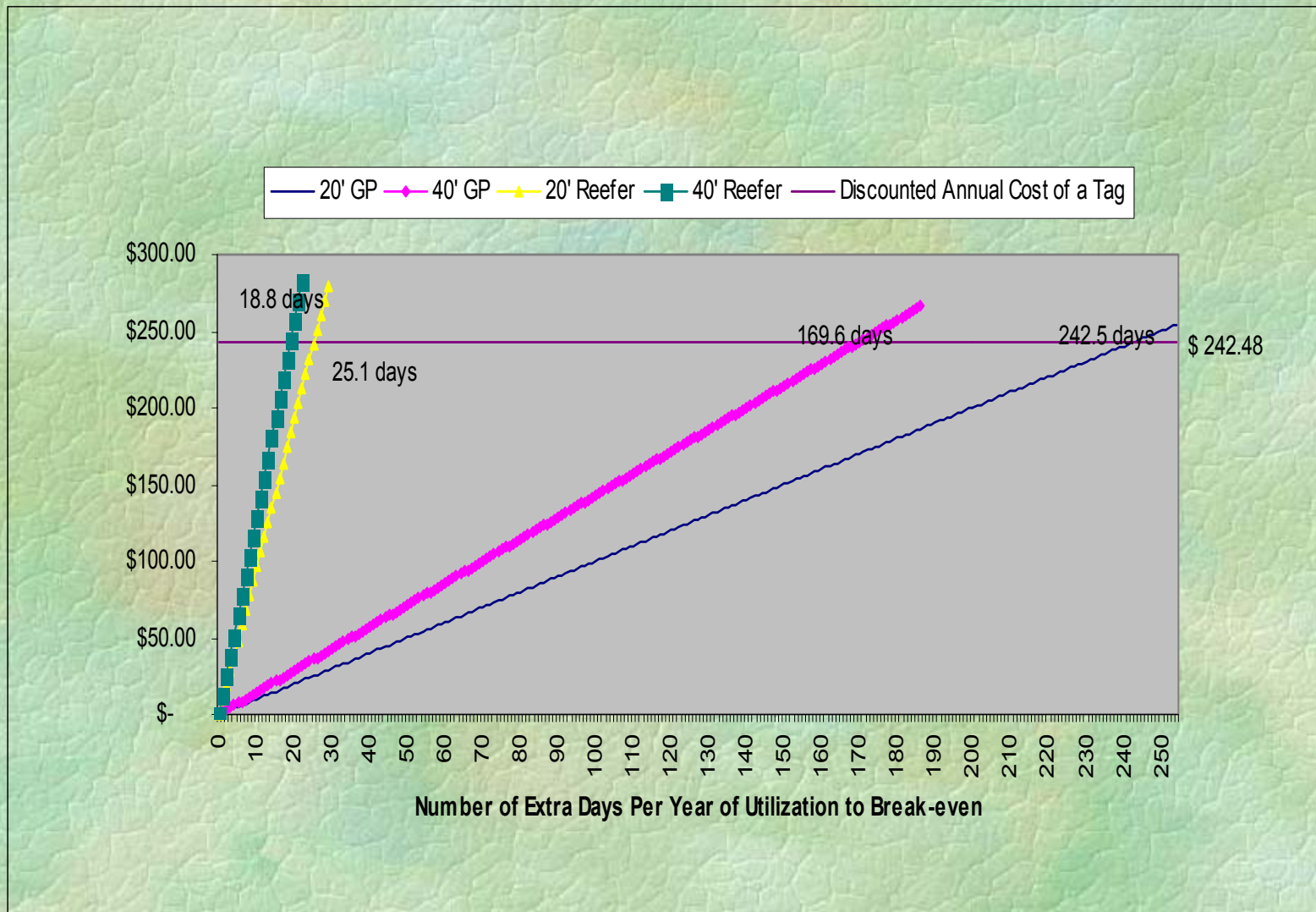
- Purchase Price: \$200.00 for purchasing the satellite-tracking unit plus \$40 to install
- Annual Subscription Fee: \$180.00
- Life of the Tag: 10 years
- Discount Rate: 12%
- Maintenance cost: 10% of the purchase price per year

New Container Prices

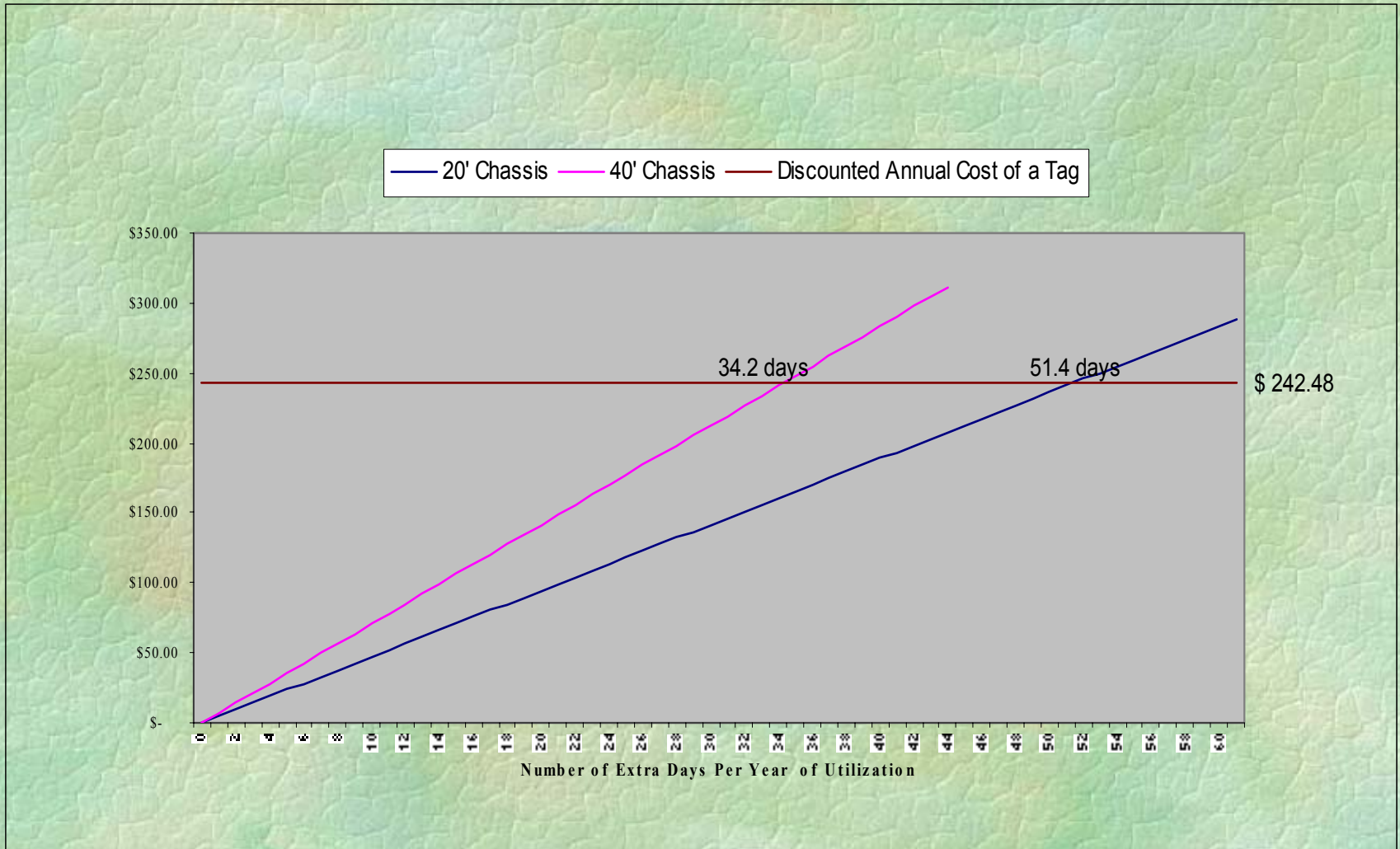
- 20' GP (General Purpose) \$1,400
- 40' GP (General Purpose) \$2,000
- 20' Reefer \$13,500
- 40' Reefer \$18,000
- Annual Maintenance Cost 10% of Purchase Price

New Chassis Prices

- 20' Chassis \$7,500
- 40' Chassis \$11,250
- Annual Maintenance Cost 10% of Purchase Price



Break-even Points of an Owned Container



Break-even Points of an Owned Chassis

Type of Benefits

- Efficiency and Productivity
- Service Quality
- Shipment and Service Integrity

Efficiency and Productivity

- Increased Asset Utilization
- Reduced Door-to-Door Transit Time
- Improved Repositioning
- Increased Demurrage Charges

Service Quality

- Better Inventory Management
- Improving the Consistency of Container Movement
- Increasing Operational Flexibility
- Increased Revenue
 - Capturing Higher-rated Cargo
 - Transporting More Containers
 - Offering Premium Service at Premium Charge

Increased Revenue Break-Even

- Capturing Higher-rated Cargo
 - 12% revenue increase in one container trip/year
- Transporting More Containers
 - 5% extra containers/year, or
 - 0.83% extra containers/voyage
- Offering Premium Service at Premium Charge
 - 2.4% increase of average rate/voyage

Shipment and Service Integrity

- Better Cargo Quality
- Improved Safety
- Lower Cargo Theft
- Lower Insurance Premium

Obstacles

- Risk for Innovator
- Technology “Proven” but not Completely Tested
- No Interoperable Hardware Standard
- No Standards for Documentation
- Possible Copying by Competitors

Conclusions

- AIT will play a Larger Role in Future
- No Existing Door-to-Door System Implemented in International Trade
- More research is needed (and is underway)